NOTES ON THE LIFE HISTORY AND VARIATION IN ADULT FORMS OF *EUPLOEA SYLVESTER PELOR* DOUBLEDAY (LEPIDOPTERA: NYMPHALIDAE: DANAINAE)

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Abstract

Notes on the life history of *Euploea sylvester pelor* Doubleday from the Northern Territory are given and *Gymnema geminatum* R. Br. (Asclepiadaceae) recorded as a larval food plant. Adult forms collected around Darwin in 1992 are figured and variation discussed. Specimens similar to the Timorese subspecies *E. s. timora* Fruhstorfer are recorded from the Northern Territory.

Introduction

Euploea sylvester (Fabricius) is distributed widely throughout Sri Lanka, southern India, Sikkim, Nepal, southern China and the Malay Peninsula, extending throughout the islands of Indonesia and Malaysia to New Guinea, Vanuatu and New Caledonia, the Philippines, Taiwan and Australia (Ackery and Vane-Wright 1984). Three subspecies are recognised from Australia. *E. s. sylvester* (Fabricius) and *E. s. tristis* Butler occur throughout the islands of the Torres Strait (Dunn and Dunn 1991), with *E. s. sylvester* also occurring from Cape York to Rockhampton (Common and Waterhouse 1981, Dunn and Dunn 1991), westward to Fish Hole Creek, 35 km east of Karumba (Woodger 1990). *E. s. pelor* Doubleday (Figs 1-6) occurs in north western Australia from Yampi Sound, eastwards through the Northern Territory, including Darwin and as far south as Mataranka and Bessie Springs, to Gove, including McCluer Island, Oxley Island and Groote Eylandt (Common and Waterhouse 1981, Dunn and Dunn 1991).

Manski (1960) listed *Ficus glomerata* Roxb.(Moraceae) as a food plant for *E.s. sylvester*, and Common and Waterhouse (1981) noted that it had been reported feeding on *Ficus racemosa* L. Sankowsky (1991) listed *Gymnema pleiadenium* F. Muell from Forty Mile Scrub and *Gymnema geminatum* R. Br. from Chillagoe as food plants. Apart from these food plant records little else has been published on the immature stages of *E. sylvester* from Australia.

Eggs and early instar larvae of *E. s. pelor* were discovered in late December 1993 and reared on cuttings of the milkweed vine *Gymnema geminatum*, which grows along the verges of coastal or inland watercourse vine scrub in the Northern Territory.

Life history

Food plant: *Gymnema geminatum* R. Br. (Asclepiadaceae).

Egg: Pale yellow, ribbed, pointed apically; approximate size 1.5 mm high, 0.5 mm wide.

Figs 1-6. Adult forms of *Euploea sylvestor* from near Darwin. Left - figs 1-3; right - figs 4-6. (1-2), dark forms; (3), typical form; (4), transitional form; (5-6), *timora*-like form.

First instar larva: Body translucent pale orange with four pairs of very small black tubercles on segments 2, 3, 5 and 11; head black.

Final instar larva (Fig. 7): Length 38-45 mm. Four pairs of black tubercles, on segments 2, 3, 5 and 11; body translucent pale green; each segment with several white transverse bands, divided middorsally; a broken pale orange spiracular band, edged with a thin white subspiracular band; segment 1 with a pair of black subdorsal eyebrow-like marks; segments 7-10 with an indistinctive blackish smudge above the spiracular band; segment 12 with pale orange, white and black bands; head black with white markings; spiracles, legs and anal plate black.

Pupa: Translucent yellow-green at first, turning to chrome in approximately two days. Similar in shape to that of *E. core corinna* (W.S. Macleay). Size 15 mm long, 8 mm diameter.

Fig. 7. *Euploea sylvestor pelor*, final instar larva.

Observations

Eggs are laid singly on the immature new growth or on the tendrils of the vine. After hatching, larvae took on average 16 days until pupation occurred, with a further 9 days until emergence as adults. Common and Waterhouse (1981) noted that the Sri Lankan subspecies, *E. s. montana* Felder & Felder, has three pairs of tubercles on segments 2, 3 and 11. Ackery and Vane-Wright (1984) list the same tubercle formula for the southern Indian subspecies *E. s. coreta* Godart. *E. s. pelor* differs in having a fourth pair of tubercles, on segment 5.

Small numbers of newly emerged adults were found from late November to early December, with eggs and larvae generally common in late December and January. Adult numbers increase from late January through May, with late February and March being the peak flight period. As with other species of *Euploea* Fabricius in the Northern Territory, adults tend to congregate in shady areas along coastal verges or inland watercourses during the day, resting on sticks, branches or vines under the canopy.

Adult variation

Figs 1-6 are representative of the forms of *E. sylvester* collected from the Darwin coastal communities during the period February to May 1992, when the butterfly was abnormally abundant compared with previous or recent years. Adult variation generally agreed with the descriptions given in Common and Waterhouse (1981) and ranged from the dark form in Fig. 1, through the typical form in Fig. 3, to the forms in Figs 5-6, which closely resemble *E. s. timora* Fruhstorfer, figured by Ackery and Vane-Wright (1984, Plate XI, Fig. 147). D'Abrera (1990, p 184) also has a similar form figured for *E. s. timora*; however, the form figured by D'Abrera as *E. s. pelor* is the dark form shown in Fig 2. This dark form is the most common variant encountered in the Northern Territory, with a female reared from an egg. On rare occasions a transitional specimen may be encountered such as in Fig 4, which more closely resembles the nominate subspecies than the typical form of *E. s. pelor*.

Specimens of *E. s. timora* held in The Natural History Museum, London (BMNH) are all similar to Figs 5-6 (P.R. Ackery, pers. comm.), suggesting that this subspecies may be far less variable than either *E. s. sylvester* or *E. s. pelor*. Waterhouse and Lyell (1914) recorded four examples of the *timora* form (two males and two females) from the Northern Territory. To date I am only aware of a further four specimens of the *timora* form collected in the Northern Territory, with the following data: 1 male, labelled Port Darwin, F.P. Dodd, (in the Australian Museum, Sydney. Col. No. KL00718); 1 male (Fig. 5), labelled Palmers Jungle, Gunn Point, 4.v.1992, D.N. Wilson; 1 male (Fig. 6), labelled Shoal Bay, 28.ii.1992, C.E. Meyer (both in C.E. Meyer collection, Canberra); and 1 male labelled Lee Point, 20.iii.1992, R.N. Stoodley (in R.N. Stoodley collection, Darwin). Common and Waterhouse (1981) noted that occasionally the spots on the forewing of *E. s. pelor* are greatly enlarged, an observation that could have been based on Waterhouse and Lyell's records and Dodd's specimen in the Australian Museum.

This seemingly rare occurrence of the *timora* form in the Northern Territory suggests one of three possible alternatives:

(i) that the eight specimens known to date were vagrants to the Darwin region; or

(ii) that both subspecies are sympatric around the Darwin region, with *E. s. timora* being the rarer. A similar situation exists in New Caledonia with *E. tulliolus* (Fabricius) (P.R. Ackery, pers. comm.); or

(iii) that the eight specimens represent an extreme variation for *E. s. pelor* and that through continued breeding this form will be reproduced just like the darker form of Fig. 2.

Further specimens of the *timora* form are required before the relationship between *E. s. pelor* and *E. s. timora* in the Northern Territory can be conclusively determined. This may be achieved through an intensive breeding program or the discovery of resident populations of *E. s. timora*.

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